

CLAIMS

1. A bone replacement material to be used by being packed into a bone defective part, wherein the bone replacement material is formed into a pellet defined by a plurality of surfaces and satisfies at least one of the following conditions (I) and (II):

(I) porosity is equal to or less than 75%; and

(II) collapsing strength is equal to or more than 15Mpa.

2. The bone replacement material as claimed in claim 1, wherein the pellet has a roughly prismatic shape.

3. The bone replacement material as claimed in claim 1, wherein the pellet has a roughly hexahedral shape.

4. The bone replacement material as claimed in claim 3, wherein the pellet is formed into a rectangular solid a part of which is cut off.

5. The bone replacement material as claimed in claim 1, wherein the pellet has a roughly pentahedral shape.

6. The bone replacement material as claimed in claim 5, wherein the pellet is formed into a triangular prism shape a

part of which is cut off.

7. The bone replacement material as claimed in claim 1, wherein the pellet has a roughly trihedral shape.

8. The bone replacement material as claimed in claim 7, wherein the pellet is formed into a cylinder solid a part of which is cut off.

9. The bone replacement material as claimed in claim 1, wherein each pellet having the roughly polyhedral shape is defined by a plurality of surfaces including a pair of opposite surfaces, in which one of the opposite surfaces is inclined with respect to the other surface at a predetermined angle.

10. The bone replacement material as claimed in claim 9, wherein the predetermined angle is in the range of 10 to 60°.

11. The bone replacement material as claimed in claim 1, wherein each pellet of the roughly polyhedral shape is defined by a plurality of edges having different lengths, in which the length of the longest edge is in the range of 5 to 10mm.

12. The bone replacement material as claimed in claim 1, wherein each pellet of the roughly polyhedral shape is defined

by a plurality of edges having different lengths, in which the length of the shortest edge is in the range of 2 to 5mm.

13. The bone replacement material as claimed in claim 1, wherein the volume of each pellet of the bone replacement material is in the range of 13 to 239 mm³.

14. The bone replacement material as claimed in claim 1, wherein each pellet of the bone replacement material has been subjected to a chamfering processing.

15. The bone replacement material as claimed in claim 1, wherein the bone replacement material is used in a state that a number of pellets of the bone replacement material are introduced into a cavity of the bone defective part and they are aggregated therein.

16. The bone replacement material as claimed in claim 1, wherein the bone replacement material is adapted to be packed into a cavity of the bone defective part using a cylindrical member having a hollow passage.

17. The bone replacement material as claimed in claim 1, wherein the bone replacement material is mainly formed of ceramics.

18. The bone replacement material as claimed in claim 17, wherein the ceramics is mainly formed of a calcium phosphate based compound.

19. The bone replacement material as claimed in claim 18, wherein the Ca/P ratio of the calcium phosphate based compound is in the range of 1.0 to 2.0.

20. The bone replacement material as claimed in claim 1, wherein the bone replacement material is adapted to be packed into a bone defective part formed in one or more bones such as vertebral body, ilium, scapula, humerus, ulna, radius, femur, tibia and fibula.

21. The bone replacement material as claimed in claim 1, wherein each pellet of the bone replacement material 1 is formed into a roughly polyhedral shape which is defined by a plurality of surfaces including a pair of opposite surfaces in which one of the opposite surfaces is inclined with respect to the other surface at a predetermined angle, and when a plurality of pellets of the bone replacement material are introduced and packed into a cavity in the bone defective part using a cylindrical member having a hollow passage each pellet of the bone replacement material is inserted into the hollow passage

of the cylindrical member such that the inclined surface of the pellet faces the inclined surface of the adjacent pellet, whereby each pellet of the bone replacement material is pushed out in various directions from the hollow passage of the cylindrical member.